

The Terry Thomas

Commercial office space takes full advantage of Seattle climate to achieve low energy use, natural light and air, and “loose fit” interior spaces.

© Lara Swimmer

Green Commercial Case Study

Integrated design, long life, and adaptable space

About The Terry Thomas

Type	Mixed-use (office/retail/parking)
Square Feet	64,600
Location	South Lake Union
Completed	April 2008

The owners and designers of this mixed-use building, located in Seattle's South Lake Union neighborhood at Terry and Thomas Streets (hence the name), wanted it to be viable as an investment, healthy and productive as a workplace, and environmentally responsible. They have met all these goals. By taking natural ventilation and daylighting much further than usual, The Terry Thomas not only improves the work setting, but dispenses with conventional air conditioning. Savings from the reduced mechanical plant in turn allow the project to be financed entirely by conventional means, sustainable features and all.

Design started with a known lead tenant. A survey of that firm's staff about priorities for new work space indicated strong preferences for daylighting, natural ventilation, and improved group meeting spaces. At the same time, an eco-charrette involving the full design team settled on the goal of LEED Gold. (Final result: both Core and Shell Gold and Commercial Interiors Platinum.)

Sustainable Responses

Light and Air

Choosing relatively narrow floor plates around a central courtyard was the key design move for The Terry Thomas. Natural light and air can readily reach the entire office area, enlivening the interior and greatly reducing the energy demands of artificial light and mechanical ventilation. In fact, the building needs no conventional mechanical cooling, and installed lighting amounts to only 0.5 watts/sf, about half the current code's limit. Ventilation is controlled by a series of exterior louvers in the facade, under the command of thermostats and



CO2 sensors, and by user-operable windows. Sunlight is moderated by custom-design sunshades on the east and west facades, and by sensor controlled exterior blinds at the northeast and northwest corners and the south-facing courtyard facade. Artificial lighting complements daylight: a multi-layer control system turns it up when daylight fades, and turns it off in unoccupied areas.

As is typical with passive design, getting this to work required careful study of details. Each facade has its own combination of solar control, window configuration and ventilation. Both computer and physical models were essential to find the room height and depth proportions for best distribution of daylight. The lighting and ventilation control systems needed adjustments, well into the first year of occupation, before settling at its intended performance level. The payoff from this continued tuning is one of the project's main lessons. By the end of the first year, a survey of occupant satisfaction returned 96% “excellent” for daylighting and 82% “excellent” for air flow/circulation. Beyond function, outside observers confirm a marked rise in staff engagement with public design

Ratings & Awards

LEED CS 2.0 Gold Rating & LEED CI v.2 Platinum Rating
US Green Building Council, 2009

Top Ten Green Project
AIA Committee on the Environment, 2009

The Team

Architect & Interior Designer

Weber Thompson
(206) 344-5700
www.weberthompson.com

Landscape Architect

Integrated Site Design
(206) 363-9049
www.i-s-d.com

Contractor

Rafn Company
(425) 702-6600
www.rafn.com

Electrical Engineer

Hultz BHU Cross
(253) 759-0118
hultzbhucross@bu.com

Lighting Design

Lighting Designs, Inc.
(206) 467-6484
info@lightingdesigns.com

Lighting Design Lab
(206) 325-9711
www.lightingdesignlab.com

Integrated Design Lab
(206) 616-6566
www.integrateddesignlab.com

Mechanical & Plumbing Engineer

Stantec
(206) 770-7779
www.stantec.com

Structural Engineer

DCI Engineers
(425) 827-2238
www.dci-engineers.com

Commissioning Agent

Keithly Barber Associates
(206) 246-1691
www.keithlybarber.com

Owner & Developer

First Western Development
Services
(425) 329-0848

For More Info

Seattle City Green Building

provides guidelines, incentives, and assistance to increase the environmental performance of buildings in Seattle.
www.seattle.gov/dpd/greenbuilding

Seattle City Light

provides stable, competitively priced and environmentally sound electricity to customers.
www.seattle.gov/light

Seattle Public Utilities

provides customers with reliable and cost-effective water, sewer, drainage and solid waste services, while protecting public health and balancing social and environmental responsibilities to the community.
www.seattle.gov/util/services

Renewable Choice Energy

provides green power.
(877) 810-8670
www.renewablechoice.com

Research & Author

Robert Knapp
The Evergreen State College
(360) 867-6149
knappr@evergreen.edu

Green Commercial Case Study

The Terry Thomas

and information, triggered by the physical and process success of their building. The owner's investment in a qualified commissioning agent has amply paid off in achieving the potential of a well-considered design.

Energy

The building has well exceeded design-stage projections for energy efficiency. Models predicted a 30% reduction from the national average for offices; the first year's measured performance shows a 42% reduction. This reflects the tenant's choice of lower-energy office equipment, good post-occupancy work by the commissioning agent, and ongoing monitoring of system performance, as well as the absence of conventional mechanical cooling. A survey after a year of occupancy showed good occupant satisfaction with the building systems.

Site

The South Lake Union neighborhood, once largely occupied by light industry, is fast becoming a live-work community, combining multi-family residences, offices, and retail. As an infill development, The Terry Thomas takes advantage of existing transport and utility infrastructure and improves opportunities for pedestrians. With a prominent corner entry into the interior courtyard, and considerable transparency of the ground floor facade, the building invites engagement by street users.

Solar access is blocked to the south by an existing building. In response, the design gathers services along a blank south wall, opens the building to the north, and uses wall grilles to admit natural light while blocking excess gain and glare from low sun.

Materials

The Terry Thomas's program called for a 100-year lifetime. The design pursued this by adopting open floor plates, durable materials, and straightforward aesthetics of the industrial warehouses typical in the area. The unencumbered plan, with its simple 1:2 proportioning system, will be easy to adapt to new uses, should that time come.

Structural materials are left exposed, as densified ground concrete or white-painted steel beams, relying on proportion and color instead of exotic finish to establish a suitable office appearance. Serving multiple functions was also an important criterion for other materials choices. For example, ceiling acoustical panels double as light reflectors and cable trays serve to support light fixtures. Of course concrete floors act as thermal mass.

Recycling was a major consideration. Separation and tracking diverted 94% of demolition and construction waste to salvage and recycling. The main structural material, steel, is the most recycled of all US materials.

Finance

The Terry Thomas was financed by private capital, with a normal balance between loan and equity. Value engineering played an important role in the project staying within budget at a time of rapidly escalating construction costs. A cost-and-payback exercise for the separately identifiable sustainable features (such as operable windows, sunshades, and automatic louvers) estimated their cost at 3% of project costs. Tenants are sub-metered and on triple net leases; because the building reduces dependence on purchased energy, their operating costs will be 30-40% lower than conventional Class A office space.



www.seattle.gov/dpd/greenbuilding

Printed on paper made with FSC-certified 100% post-consumer fiber.

December 2009

